

gives a clue to their access to the parts of England where the three-field system is best shown. That they did not at once dominate the west is clear from archaeological evidence, especially from the finding of rapier-like dirks in place of leaf-shaped swords in the south and south-west. In Wales and other hill-lands the moorland-village seems to have survived, and, when valley clearing spread there, family groups in single households moved downhill and built the Tyddyn near shelves of cultivation on the hill-sides. Mr. Peake thinks the Romans met the valley-village-community in Gaul and Alemannia and probably interfered with it as little as possible, so that according to him, the continuity from earlier times would be much greater than Seeböhm thought. This is a view which obviously needs further examination on the basis of study of geographical distributions and we specially need maps of the distribution of open-field villages in France. Mr. Peake's view is, at any rate, far more helpful than the one which would ascribe the three-field system to the Saxon invaders of Britain, for these last came from a region where the one-field scheme was characteristic and they had little connexion with the Alemannic areas of distribution of the three-field system.

Having outlined this interesting opinion Mr. Peake follows, on fairly orthodox lines, the open-field valley-village down to its decay. He accepts the general view that diminution of fertility of the land was a factor of this decay, though that is now disputed and it is thought that the properly-organised folding of stock pastured on uncultivated lands would bring in enough manure. That this organisation was adequately maintained everywhere in view of competing claims for the manure between lord and tenant is, however, very doubtful, so the view in this book is probably not very far from correct.

Mr. Peake's years of public work in rural England give a special interest to his concluding chapter, which asks, what of the future? He sees that the old village is dead or dying from loss of internal cohesion and that there is too much tendency towards occupational as against neighbourly cohesion. He also fears the further urbanising of the people if the Garden City idea, which he admits to be the best urbanism, spreads. He thinks the Saxon village may have had less than 100 people, the mediæval village perhaps nearly 200, the modern survival about 200, more or less. As civilisation developed in classical lands villages fused, and there is, according to Mr. Peake, much need of larger units, especially for shopping and amenity purposes. The village has been losing its people, especially the best, at an alarming rate, but the tide of numbers turned a little after 1900 in several districts,

thanks probably to the motor car and cycle. To redeem village life from dulness Mr. Peake thinks a population of about 1000 would be desirable, and that in such a unit most standard occupations could be represented, an important factor of contentment now commerce has enlarged our needs. He pleads for farm buildings around the outskirts of the village so that the labourer may be near his beasts, and for small holdings in the outer ring of the village. A village of 1000 can have a doctor, a lawyer, a bank, a bootmaker, a builder, a carpenter, a reasonable school, a public hall, and a few shops of some value. Such villages would encourage retired people, maiden ladies without specialised occupation, and so on to settle in them, and might well lead to a redevelopment of handicraft at all events in leisure time.

The detailed suggestions may raise dispute, but what is of value here, besides the long and intimate working-experience of rural life which the author possesses, is the fact that the present unfortunate tendency towards separatist specialism is avoided. It is seen that small holdings *per se* are not enough, and that the settling of wage-rates or drafting of housing schemes is only a partial help. It is Mr. Peake's desire to start from life, and from the provision of opportunities of healthy exercise of varied faculties, that marks out his book as worthy of careful and earnest consideration.

H. J. F.

Climbing Palms and the Sago Palms.

Annals of the Royal Botanic Garden, Calcutta. Vol. 12. Part 2: *Asiatic Palms—Lepidocaryeæ*. Part 3: *The Species of the Genera: Ceratolobus, Calospatha, Plectocomia, Plectocomiopsis, Myrialepis, Zalacca, Pigafetta, Korthalsia, Metroxylon, Eugeissona*. By Dr. Odoardo Beccari. Text, pp. vi+231+6 plates. Plates, 120, size 21 in. × 14 in. (Calcutta: Bengal Secretariat Book Depot, 1918-1921.) Rupees 40; 3l.

IT is a matter of great regret that the late Prof. Beccari did not live to see the publication of the final part of his fine memoir on the Asiatic *Lepidocaryeæ*, which he had very fittingly dedicated to the memory of the late Sir George King, the founder of the *Annals of the Calcutta Botanic Garden*.

It was characteristic of Sir George that he selected the proper people to prepare the valuable memoirs that have preceded the one under review, though his own contributions are among the most noteworthy of the series. This present part constitutes the third of Prof. Beccari's memoirs on the *Lepidocaryeæ*, vol. xi. having been devoted to the important genus *Calamus*, and vol. xii., part 1, to the genus *Dæmonorops*. Like

its predecessors, the present part is accompanied by a magnificent series of plates and analytical figures of the flowers and fruits of the various species, which very materially enhance the value of the memoir.

The genus *Ceratolobus*, which is confined to the Malay Peninsula, Sumatra, Java and Borneo, consists of six species, four of which are described by Beccari. Three of these four are found in Borneo and two in the Malay Peninsula—one of the latter, *C. laevigatus*, Becc. having six varietal forms spread over the Malay Peninsula, Sumatra and Borneo. *Calospatha Scortechinii*, collected by that assiduous botanist, Father Scortechini, in Perak, and described by Beccari, comes next on the list and is an interesting and very distinct palm, having a homogeneous albumen in the seeds, two to three in a fruit. In the genus *Plectocomia*, which are large, spinous, calamoid palms with terminal inflorescences, six new species are described. One of these, *P. Kerrana*, was discovered at Doi Soetep, near Chiangmai, Siam, by Dr. Kerr, who has made known to us the riches of the Siamese flora by his admirable collections in that country.

Plectocomiopsis is a new genus described by Beccari, containing five species, from Lower Burma and throughout the Malay Peninsula and Sumatra, and is again a calamoid, dioecious genus allied to *Myrialepis*, Becc. In its vegetative organs it resembles *Plectocomia*, though it differs widely in the spadices and flowers. Beccari then passes to the genus *Zalacca*, a characteristic and exclusively Indo-Malayan group containing thirteen species, denizens of rich, deep and moist soil in the recesses of primæval forests. The home of *Z. edulis*, which is frequently cultivated for its edible acid fruits, is not definitely known, but it is considered to be a native of the Malay Islands. It has been known since the time of Clusius, who examined fruits of this palm sent over from Bali in brine about 1600. Two new varieties of this species are described, and six new species by Beccari; of the latter, *Z. dubia* is only certainly known from the male flowers.

The genus *Pigafetta* described by Beccari was regarded by Martius as a section of *Metroxylon*, the sago palm, but Beccari proves that it is a distinct genus by its polycarpic nature. It is not closely allied to any other genus of *Lepidocaryæ*, and is a tall tree with dioecious, axillary spadices and small calamoid fruits. It is due to these small fruits, no doubt, which are eaten by birds, that this palm, *P. filaris*, has so wide a range in the Moluccas, Celebes, New Guinea and Indo-China.

The next genus dealt with, *Korthalsia*, is again a genus of climbing palms containing twenty-six species, mainly Malayan. They are of economic use as, being very tough, the naked canes are used for tying, etc., by

the natives; they are also of interest in being myrmecophilous, with the appendage at the mouth of the leaf sheath (the ocrea) largely developed and sometimes transformed into a closed ant nidus. Extra-floral nectaries are also developed in the axillæ of the leaflets.

Metroxylon, the sago palm, and *Eugeissona*, one species of which, *E. utilis*, Becc., also yields a sago flour, complete the Asiatic *Lepidocaryæ*, and the part is concluded with an enumeration of the extra Asiatic palms belonging to this family, among which *Raphia* and *Mauritia* are perhaps the best-known genera.

The genus *Metroxylon* contains six species with numerous varieties, and the account of these valuable palms occupies nearly forty pages of the memoir. They are arborescent palms with a terminal inflorescence, and the two best-known species are *M. Rumphii* and *M. Sagus*, which are widely cultivated in the Moluccas, for the sake of the starch or sago flour extracted from the stem. Both these palms yield many other commodities used by the natives. Prof. Beccari considers the Moluccas to be the home of these two species, and especially the island of Ceram, where a new species, *M. squarrosus*, Becc., has been found in abundance at the east end. Owing to their importance in affording food to the natives, they have now been carried far and wide.

To appreciate the value of this work it must be studied in detail, and all students of palms and botanists generally will realise how much they have lost by the death of Prof. Beccari, who was the pre-eminent authority on palms.

A. W. H.

The Control of Electric Power.

Switching Equipment for Power Control. By S. Q. Hayes. Pp. vii+463. (New York and London: McGraw-Hill Book Co., Inc., 1921.) 20s.

SOME of the most important problems with which the engineer of a large power station has to deal are in connexion with the switches and control apparatus of his distribution system. Information on this subject can be found in a very condensed form in several text-books, but there is a demand for more detailed information, and in particular there is a great demand for a definite statement of the physical principles on which many of these devices are supposed to act. In Mr. S. Q. Hayes' book detailed information is given of many types of switchgear of American manufacture, but as a rule the descriptions are similar to the descriptions we get in manufacturers' catalogues, and in some cases they are actually taken directly from these catalogues. The author is one of the leading experts on switchgear, and occasionally